

What is claimed is:

1. A purification process for manufacturing a high pure acarbose uses alcohol for precipitation and separation, a strongly cation exchange chromatography and an immobilized enzyme affinity chromatography for purification and purifying an acarbose-containing fermentation broth to get a high pure acarbose.
2. The purification process of claim 1, wherein the strongly cation exchange chromatography uses a styrene 10 divinylbenzene copolymer without methoxymethylmethacrylamide to be a resin matrix.
3. The purification process of claim 1, wherein the enzyme of the immobilized enzyme affinity chromatography uses  $\alpha$ -amyloglucosidase( $\alpha$ -glucoamylase).
- 15 4. The purification process of claim 1, wherein the strongly cation exchange chromatography uses a cation exchange

resin containing 20-200 mg sugars/mL resin.

5. The purification process of claim 2, wherein further comprising a step after the strongly cation exchange chromatography uses a solvent, 0~2.0N ammonia solution, to manufacture a high pure acarbose.
6. The purification process as claim 3, wherein further comprising a step after the immobilized enzyme affinity chromatography uses a solvent, 55~75°C distilled water, to manufacture a high pure acarbose.
- 10 7. The purification process as claim 1, wherein the purity of high pure acarbose is large than 95% (wt/wt) used to treat diabetes.
8. A purification process for purifying the acarbose comprising the steps of:
  - 15 eliminating mycelium from an acarbose-containing fermentation broth by centrifugation;

concentrating filtrate of the acarbose-containing  
fermentation broth to be consistency by a concenteration  
system;

adding adequate ethyl alcohol to the consistency and  
5 blending to be a solution;

taking an upper liquid from the solution by centrifugating;

concentrating the upper liquid to be a consistency by the  
concentrating system;

putting the consistency into ethyl alcohol to get a  
10 consistency liquid;

taking a sediment from the consistency liquid by  
centrifugating and solving the sediment by water to get an  
impure acarbose solution;

blending a strongly cation exchange resin with the  
15 acarbose solution to get a resin;

using sodium chloride solution to eliminate an impurity in

the resin;

using ammonia solution to eliminate an impurity in the resin; and

solving the resin with ammonia solution to get a high pure

5 acarbose.

9. The purification process as claim 8, wherein the eliminating myselium from acarbose-containing fermentation broth step could use a filter to replace centrifugating.

10 10. The purification process as claim 8, wherein the purity of high pure acarbose is 60%(wt/wt).

11. A purification process for manufacturing a high pure acarbose comprising the steps of:

adjusting pH value of an impure acarbose;

15 adding an cation exchange resin into the impure acarbose to get a solution;

blending the solution and taking an upper liquid;

adding a strong cation exchange resin into the upper liquid

to get a mixing solution;

mixing and shaking the mixing solution to make the strong

5 cation exchange resin absorbing acarbose;

using sodium chloride solution to eliminate an impurity in

the acarbose; and

using ammonia solution to elute the acarbose to get a high

pure acarbose.

10 12. The purification process as claim 12, wherein after the

adjusting pH value step adds a cation exchange resin

containing 250 mg sugars/g resin.

13. The purification process as claim 12, wherein after taking

the upper liquid adds a strong cation exchange resin

15 containing 80 mg sugars/mL.

14. The purification process as claim 12, wherein the purity of

high pure acarbose is up 78%.

15. A purification process for manufacturing a high pure acarbose comprising the steps of:

adjusting pH value of an upper liquid from an impure

5 acarbose mixing a strong cation exchange resin;

passing the upper liquid through a strong cation exchange resin column ;

washing the strong cation exchange resin in the column by deionized water till the absorbance of strong cation exchange

10 resin being zero or steady;

getting an impure acarbose by using ammonia solution to elute the strong cation exchange resin;

concentrating the acarbose-containing fractions to be a volume by a concenteration system; and

15 using alcohol for extracting the impure acarbose to get a high pure acarbose.

16. The purification process as claim 16, wherein the flow velocity of passing the strong cation exchange resin column is 2.5 mL/min.

17. The purification process of claim 16, wherein the ammonia 5 solution gradient of ammonia solution for eluting the impure acarbose is 0.5~1.5N.

18. The purification process as claim 16, wherein the purity of high pure acarbose is up 85%.

19. A purification process for manufacturing a high pure acarbose comprising the steps of:  
solving a powder of acarbose, which the purity is 83%~87%, by distilled water to be a solution;  
adjusting pH value of the solution ;  
passing the solution through  $\alpha$  -amyloglucosidase column;  
15 washing the  $\alpha$  -amyloglucosidase column by using a times deionized water volume as the volume of the  $\alpha$

-amyloglucosidase column;

eluting an acarbose from the  $\alpha$  -amyloglucosidase column by distilled water;

concentrating the acarbose-containing fractions to be a 5 volume by a concenteration system; and

using alcohol for precipitating the impure acarbose to get a high pure acarbose.

20. The purification process of claim 20, wherein the flow velocity of passing the  $\alpha$  -amyloglucosidase column is 1.5

10 mL/min.

21. The purification process of claim 20, wherein the washing the  $\alpha$  -amyloglucosidase column step uses two times deionized water volume as the volume of the  $\alpha$  -amyloglucosidase column.

15 22. The purification process of claim 20, wherein washing the  $\alpha$  -amyloglucosidase column by deionized water step

changes the flow velocity of passing the  $\alpha$ -amyloglucosidase column being 210nm till the absorbance of the  $\alpha$ -amyloglucosidase is steady.

23. The purification process of claim 20, wherein solving an impure acarbose from the  $\alpha$ -amyloglucosidase column by distilled water, 65°C.

24. The purification process of claim 20, wherein the purity of the high pure acarbose is up 95%.